antrum due to an abscessed tooth. I believe the treatment of chronic sinusitis resolves itself into:

1. General care, *e. g.*, diet, exercise, endocrines and allergic studies, etc.

2. Building up the resistance by vaccine, antigens, etc.

3. The removal of foci of infection that have an effect on the individual locally or generally, *e. g.*, tonsils which may produce a general toxemia; and locally, acute infections of the upper respiratory tract; diseased teeth having a general toxemia and locally keeping up a chronic antrum, etc.

4. Proper drainage and ventilation of all sinuses, if necessary, by a thoroughly complete septum operation.

5. The removal of the local pathology, *e. g.*, doing a Caldwell-Luc on an antrum that fails to respond to the above and other measures.

We frequently find abscesses in and below the mucosa and osteitis that I do not think any treatment other than total removal of the membrane and diseased bone will cure. I find that many of my sinusitis patients will get well by treatments, but return with a new sinusitis with each acute rhinitis. Measures taken to prevent these attacks are of great benefit, and the longer one goes without an acute rhinitis the better is the chance for no return of the sinusitis. After having put the patient in the best local and general condition, then, if the antigen of Doctor Krueger will restore the chronic mucosa to its normal or near normal, I am for it. I hope that Doctor Kracaw will continue his work and give us a further report on this endo-antigen.

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MATHEW N. HOSMER, M. D. (384 Post Street, San Francisco).—I started using the vaccine and lysate, as prepared by Dr. A. P. Krueger, about a year and a half ago, in an effort to relieve those patients who did not respond to ordinary methods of treatment and those who, in addition to their sinus infections, also had arthritis. My series comprises about thirty cases to date. While rather small it shows results that are truly encouraging.

I think it advisable to use considerable care in the choice of suitable patients for this type of treatment, in order to eliminate those who would not respond. I have not advised vaccine treatment in any patient who had obvious anatomical defects in sinus drainage, or those suffering from general physical ailments, such as glandular dysfunction or allergic sensitivity. Those having such defects will, of course, show improvement when the defects are corrected.

The group that shows repeated sinus infections in spite of adequate sinus drainage is the one best suited for this sort of treatment. One may see an isolated infection in one ethmoidal labyrinth, or a generalized pansinusitis, or the type with which I have had splendid results, namely, the person with the boggy wet membranes showing no definite pus. The results in each of these groups have been good, but the improvement in the boggy membrane has been the most gratifying, as these are the ones that have shown no results with other methods of treatment. In these cases, after a few weeks of treatment the membranes show a decided improvement in tone and color, and there is a definite diminution in the amount of postnasal discharge.

The group having definite ethmoidal and sphenoidal infections have shown improvement. I believe this is a step forward, as the results from ethmoidal surgery, both radical and intranasal, are often discouraging. I have not used the lysate in the antra, as I feel that the Caldwell-Luc operation has proved quite satisfactory in most cases. Here we are dealing with one large cavity, which is easily cleaned, instead of numerous smaller cells, as in the ethmoidal labyrinth. Doctor Kracaw may be referring to the antra, on which the intranasal window operation has been done; but even in these I believe that, if they do not clear within a reasonable length of time, the radical operation should be done.

Those cases having arthritis due to sinus infections have responded very well. The relief of pain and the return of function have been noticeable. The results have been considerably slower than in those with uncomplicated sinusitis.

The culture reports in my cases have been quite similar to those shown in Doctor Kracaw's cases. The frequency with which hemolytic *Staphylococcus aureus* has been found is surprising. Several of my cases have shown almost pure cultures of this organism.

I have instilled the lysate by the Proetz displacement technique, as has Doctor Kracaw, and wish to point out that one should use care in shrinking the nasal membranes thoroughly before attempting displacement, so that the solution may enter all of the sinuses. I have found that the lysate so used is far superior to antiseptics, such as the mercurials or phenol in oil.

MINOR BACK INJURIES*

By T. E. P. GOCHER, M. D.
San Francisco

DISCUSSION *by Harlan Shoemaker, M. D., Los Angeles; George J. McChesney, M. D., San Francisco; James T. Watkins, M. D., San Francisco.*

IN making a general survey of the subject of minor back injuries, we must consider injuries to the joints, muscles and ligaments, and minor fractures of the bones of the spine.

In certain instances the symptoms of injury may be delayed for varying periods, namely, from an hour to one or two days. Complications may also develop, the most common being an inflammation of the fibrous tissue, or fibrositosis, in the region of the injured area. This fibrositosis may spread and involve nerves, bursae and muscles, and may cause a synovitis if joint structures are involved. The disability period of these conditions will depend largely upon the correct diagnosis and the form of treatment given.

MUSCLE INJURIES

The usual muscle injuries are contusion, lacerations, strain and partial or complete rupture of muscle fibers. As aforementioned, complications may develop; and if a hemorrhage has occurred, frequently a fibrositosis develops during the repair of the area, and the same will cause a prolonged disability. This disability may be prevented to a greater or less extent by appropriate and early treatment with physical therapy. In considering muscle injuries, the difference between "strained" and "overworked" muscles must be remembered. Strained muscles occur following severe muscular effort, exercise or direct trauma to the area. The maximum tenderness is over the damaged area, and disablement is immediate after the injury. If partial rupture of muscle fibers is present, then the onset may be delayed several hours. There will be pain when the normal elasticity of the muscle is exceeded. Active stretching will cause pain, and passive stretching is painless.

If the muscles are overworked, then a diffuse ache may be present; and if local the muscle may

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throb at intervals. The limb or area may feel weak and, later, pain may be complained of. Cold weather often aggravates the condition.

After a blow, strain or prolonged contraction, a muscle often becomes swollen and tender, and a sense of stiffness will prevail. Acute pain may be present when the muscle is put in action.

With the use of physical therapy, the writer has obtained the following results in curing cases of muscle injury referred to him.

	Treatments	Days to Cure
Rupture of fibers of the rector spinae	4	5
Strain of lumbar muscles	2	5
Latissimus dorsi muscle strain	2	2
Strain of rhombodei muscles	4	7
Multifidus muscle strain	5	6
Quadratus lumborum strain	4	4
Pyriformis strain	2	6

The above statistics were obtained from, and are the average of the treatments of a number of muscle strains.

If complications should develop with these conditions, the time for curing them often is prolonged two or three times.

Treatment in these conditions should consist of a bake from fifteen to twenty minutes at such a distance that the heat feels "just warm." The bake should not be covered, to obtain the best results. Then massage, at first mildly but increasing in force; exercise and electrical massage if possible. Long-wave, ultra-violet radiation from a mercury quartz ultra-violet lamp is of value in these cases.

INJURIES OF LIGAMENTS

Ligament injuries usually suffered are sprains, and a fascitis may develop at the point of insertion. Sprained ligaments are usually produced by overbending the spine in any direction or from a sudden severe strain. Severe pain is present at the receipt of the injury. The point of maximum tenderness is over the torn ligament. Stretching of the injured ligament is painful, and any movement, either active or passive, is painful. Normally, ligaments are elastic, but they lose their elasticity when they are inflamed. When overstrained, they cause a sharp and severe pain.

Sprain of the anterior spinal ligament is rare, and is caused by hyperextension of the trunk; and immediate, severe and deep pain is felt at the site of injury.

A sprain of the posterior spinal ligament is caused by a sudden forced flexion forward. The pain is immediate and severe at the site of injury. There is severe tenderness over the site of injury to palpation.

The sacro-iliac, or sacro-sciatic ligament may be sprained. They cause tenderness and often swelling over their course, and at their origin or insertion. Also pain and tenderness will result from stretching, or from the application of any tension to the area.

The iliolumbar ligament is frequently sprained. This injury causes a deep pain or soreness over the course of the ligament. Stretching will cause pain, whereas hyperextension of the spine will relieve the soreness or pain.

Many times poor posture will cause a gradual ligament sprain that at any time may develop into a "painful stage." This state is often erroneously believed to be the result of an accident, whereas it has developed in the logical progress of the condition. For example, if the "painful stage" should occur while a man is at work, often he makes the mistake of attributing the pain to an accident occurring in the course of his employment.

From the use of physical therapy the following disability periods were obtained in curing the following sprains of ligaments.

	Treatments	Days to Cure
Sprain of sacro-iliac ligaments	9	12
Sprain of lumbosacral ligament	6	9
Sprain of iliolumbar ligament	7	8
Sprain of anterior spinal ligament	18	26
Sprain of sacrosciatic ligament	8	14

In sensility, and if a fascitis or fibrositosis is present, then the disability period of the injury may be prolonged from three to six times the above periods.

In a study of 310 cases of back injury, the writer found the following percentages of sprain:

	Per Cent
Lumbosacral	23.2
Sacro-iliac	18.4
Iliolumbar ligament	11.9
Lateral lumbosacral	10.9

Among other injuries present were:

	Per Cent
Strain of quadratus lumborum	12.9
Strain of lumbar muscles	3.0
Strain of the rhombodei	7.1
Strain of multifidus muscle	5.4

In the above cases, the writer personally treated and diagnosed the cases.

Treatment of these conditions should consist of a moderate amount of penetrating heat, such as radiant heat; mild massage and firm, but not too tight, adhesive plaster support to the area. Posture may greatly affect these conditions, so that care should be taken to rectify any faulty position. The patient should be shown, in a manner that he can understand, the best way to correct such faulty posture.

JOINT INJURIES

There are numerous joints throughout the spinal column, and any one of these may be injured. The condition may be a simple ligament sprain, or a synovitis on an arthritic joint. In some joints, if a synovitis should develop, the disability period will be greatly prolonged.

In a sprained joint the onset of pain is usually immediate; however, it may be delayed several hours if a synovitis is developing. At times there is a sensation best described as of "something giving way." The pain is often very severe. At first the pain and tenderness is strictly limited to the site of the joint affected, but later this tender area may enlarge and referred pain result. If the pain is deep-seated, it may follow the course of a nerve. Swelling occurs at once or very shortly after the injury. The pain or soreness is usually unilateral, and any movement of the joint intensifies it.

The common diagnoses of minor back injuries are sacro-iliac sprain, lumbosacral sprain, or lumbar strain. The diagnosis of sprains and synovitis

of the lateral lumbar joints, and especially the lateral lumbosacral joints, is rarely made. This last joint is frequently sprained, and is the cause of many faulty diagnosed back injuries, and the treatment is not usually of the best.

A sacro-iliac synovitis is a very serious condition, especially if the condition is bilateral. It is one of the most dfficult conditions to treat, and unless treated correctly the disability period may run into many months. In studying a series of sacro-iliac joint area injuries, the writer obtained the following statistics:

UNILATERAL SACRO-ILIAC TRAUMA

Area	Number of Cases	Per Cent
The joint itself affected	9	16.9
The ligaments of area affected	44	83.1

In studying thirty cases that were diagnosed as a lesion of the sacro-iliac joint, the writer obtained the following:

Area	Number of Cases	Per Cent
The joint was affected	4	13.3
The ligaments were affected	20	66.6
The muscles over the area were affected	6	20.1

In studying another series of cases diagnosed as sacro-iliac injuries, the writer found that in only 8.6 per cent of these cases was the sacro-iliac area actually injured.

The difference between a joint injury and a ligament injury is difficult to diagnose at times. It is not often that a joint injury occurs without a ligamentous lesion; but a ligamentous lesion may occur and no joint lesion be present. At times a spreading fibrositosis may occur; and if this affects a joint, then a synovitis may develop from the inflammation.

A joint lesion of an arthritic joint is very important; for unless good treatment is instituted at once, the disability period may be very long. In some cases involving osteo-arthritis of the back, it is impossible to fully cure and remove all pain. The following is a table of what can be done in treating the spinal joints for injury until cured and free from pain. These statistics are from the writer's own experience.

	Treatments	Days to Cure
Sprain of an osteo-arthritic lumbosacral joint	26	54
Sprain of osteo-arthritic spine, hips, and lumbosacral joint	79	186
Sprain on a lower dorsolumbosacral arthritic joint	35	75
Sprain of lateral lumbosacral joint, unilateral	5	6
Sacro-iliac synovitis, unilateral	23	31

Treatment of these joint conditions should consist of immobilization and rest, when required. Heat should be carefully applied, and great care be taken that a stimulating effect is not obtained. The tone of the areas surrounding should be kept up. Rest should be in a "position of natural ease," and care should be taken that any pressure applied is not too tight. Posture has a marked effect on spinal joints, and this fact should be carefully studied and corrected when necessary.

INJURIES TO BONE STRUCTURES

Minor injuries to the bones of the spine are usually in two forms, either a contusion or a fracture of the transverse or spinous processes. An aggravation of an existing condition, as an arthritis, may occur. A contusion may cause severe pain, and is most common over the coccyx or sacrum. Penetrating heat and mild massage is called for in this instance. At times a periosteal reaction may occur, and frequently this is called a fracture if seen late. A mild massage, using an indirect diathermy at the same time, is of great value in these cases.

A fracture of either a transverse or a spinous process may occur. In the case of the transverse process, the cause may be either direct trauma or muscular contraction. The writer has found the latter to be present in 41.8 per cent of a series of cases of fracture of the transverse processes. The disability periods of these fractures may be from six to twenty-eight weeks; or in an osteo-arthritic case, pain may be a permanent feature. An ordinary simple case should be well in six to eight weeks. There are a certain number of these cases that are never diagnosed, and the diagnosis given will be "sprained back." The taking of x-rays of the injured area will usually "clinch" the diagnosis. These cases usually react very well to treatment, and no permanent disability should remain. Treatment generally consists of hyperextension at first, and is followed by bake, massage and exercise.

PAIN

Pain is one of the chief symptoms of a back injury; and if the pain is of a bilateral nature and follows the course of a nerve, then care must be taken that there is no compression fracture present. If present this pain usually develops suddenly and may be severe in nature.

A muscle pain is usually a constant ache. The pain of connective tissue is of a dull aching nature, except when at absolute rest. The pain of nerves is shooting, tingling, sharp and boring. A bone pain is boring and is worse at night, and at any time when there is a congestion present at the area. There are five instances when pain may be delayed following trauma, and they are: (1) in a joint lesion; (2) when a synovitis is developing; (3) when a myositis is present; (4) if a partial muscle rupture is present; and (5) if a bursitis is developing. Pain may also be delayed following injury to a cartilage.

If tenderness is present to an area where pain is complained of, then pathology is usually present at that area; if no tenderness is present, then suspect that the pain is referred.

MECHANICS OF THE INJURY

It is important always to consider the mechanics of the injury, and if the claimed injury could have been caused by the alleged described accident. Other points to take into consideration are:

1. Did any unforeseen event occur, as slipping, stumbling, or falling?

2. Was there a body-twist at the time of accident?

3. When did symptoms first appear, and in what sequence?

It is known that a very severe injury may occur from a minor accident. In these cases it must be ascertained whether there is any constitutional disease present, or any condition that would tend to lessen the normal resistance that nature has given to that area.

It must be remembered that there are certain diseases that go into a "painful stage" very suddenly, and very often these cases are called "accidents" by the recipient, especially if he should be working at that time. An acute fibrositosis, of either infectious or metabolic cause, is one of the most common diseases to suddenly develop a "painful stage." Others are influenza, smallpox, kidney disease, lumbago, and reflex conditions from the abdomen and pelvis.

MALINGERING

During the writer's experience, malingering has not been found to be very common. However, the tendency to exaggerate the symptoms complained of is very common. Personal experience, the knowledge of anatomy, and psychology, will assist a great deal in these cases. If there is no hip injury, and the patient with a back sprain assumes the "diving posture" in bending forward, then suspect a fraud or an exaggeration of symptoms. The same should be suspected if severe pain is complained of and there is no muscle spasm, although mild pain may be present.

Before accusing an injured person of being a malingerer, make certain that there is nothing the matter with him. Reconsider the case from all angles, and if in doubt have a consultation. Make sure that you can prove your charges, and do not accuse an injured person of malingering because you are unable to correctly diagnose the case.

Several important points to remember in considering the subject of malingering are:

1. In real lumbago, there is no maximum tender area.

2. If the spinal area alone is injured, it is possible to bend forward at the hips.

3. If the spine bends below the area of injury, then suspect a fraud, unless there is only soft tissue injury.

4. If claim is unilateral sciatica, and there is no tenderness of the lumbar third, fourth, fifth, or sacral first, then suspect a fraud.

5. If pain is bilateral and an accident is claimed, then consider the possibility of fraud and the mechanics of the injury.

6. If the painful area is tender to pressure, then pathology is present; if not tender, then the pain is referred.

7. Consider the anatomy of the area, and remember that in certain instances a severe injury may result from apparently minor trauma.

TABLES INDICATING CAUSES OF BACK PAINS

The following tables were obtained as a result of studies of the writer throughout a number of years on the subject of back pains.

The following table was worked out from a study of 116 consecutive cases of back pains reported to the writer in a construction camp on one of the major developments in this State:

Condition	Number	Per Cent
Chronic prostatitis	7	6.2
Acute prostatitis	3	2.5
Loaded or irritation of rectum	2	1.7
Acute cystitis	3	2.5
Kidney disease	4	3.4
Strains	62	53.4
Blows, direct	11	9.5
Fractures	24	20.6
	116	99.8

In the above I found:

	Per Cent	
Disease	16.3	
Injury	83.7	
Muscles affected	27	27.7
Ligaments affected	9	9.2
Joints affected	37	38.1
Fractures affected	24	25.0
	97	100.0

In a study of 310 back injuries, I found the following:

Condition	Number	Per Cent
Lumbosacral sprain	72	23.2
Sacro-iliac sprain	57	18.4
Quadratus lumborum strain	40	12.9
Iliolumbar ligament sprain	37	11.9
Lateral lumbosacral joint sprain	34	10.9
Lumbar muscle strain	9	3.0
Latissimus dorsi strain	10	3.2
Multifidus muscle strain	17	5.4
Rhombodei muscle strain	22	7.1
Sacrococcygeal joint sprain	2	0.8
Acromioclavicular joint sprain	10	3.2
	310	100.0

In studying the causes of prolonged treatment and aggravation of symptoms in one hundred cases, I found the following causes, and often more than one cause to a case. Removal or treatment of the believed source of infection gave relief in each case.

Condition			Number	Per Cent
Posture			25	25
Pelvic disease			7	7
Hip arthritis			3	3
Infection			55	55
(a) Teeth	12 cases	21.8 per cent		
(b) Tonsil	4 cases	7.2 per cent		
(c) Prostate	6 cases	10.9 per cent		
(d) Alimentary	33 cases	50.1 per cent		
Arthritis			35	35
(a) Infections	10 cases	28.6 per cent		
(b) Metabolic or toxic	25 cases	71.4 per cent		

In studying 279 industrial cases, I found the following complication table:

Area	Total Cases	Complications Yes	Per Cent	No	Per Cent
Lumbosacral	72	52	72.2	20	27.8
Quodratus lumborum	40	17	42.5	23	57.5
Sacro-iliac	57	37	64.9	20	35.1
Ligament iliolumbar	37	21	56.7	16	43.3
Lateral lumbosacral joint	34	15	44.1	19	55.9
Multifidus muscle strain	17	7	41.1	10	58.9
Rhombodei muscle strain	22	10	45.4	12	54.6
Total and average	279	159	53.8	120	46.2

From studying the above, I found that in 54 per cent of industrial cases, complications develop and have to be treated.

IN CONCLUSION

When you are examining a minor back injury, remember the possibilities and do not "jump at the diagnosis." Try to give, as near as possible, the correct diagnosis in anatomical terms, for only then can a treatment be worked out that will really lessen the disability period, and results be obtained.

333 Pine Street.

DISCUSSION

HARLAN SHOEMAKER, M. D. (1014 Wilshire Medical Building, Los Angeles).—Slight, moderate, and severe muscle strains of the back are conditions overlooked and seldom properly treated when diagnosed. In the first two of these diagnoses in back strains, Doctor Gocher has very carefully drawn our attention to the possibilities of lack of care, oversight in diagnosis, and absolute abandonment of the individual as far as treatment is concerned.

It needs but little imagination to find the foundation for a cult in the neglected patient with a painful back. Until recent years, 96 per cent of all back injuries and diseases were overlooked. The author is to be complimented for again drawing our attention to these conditions, and outlining an efficacious method of *treatment.*

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GEORGE J. MCCHESNEY, M. D. (450 Sutter Street, San Francisco).—This paper is to be highly commended in that it goes far in regulating or systematizing the large field of complaints designated as due to minor back injuries. The chief value of this study to me is the effort made to diagnose the actual anatomical tissue involved in the injury. If this can be done by a careful study of the mechanics of the injury as well as the ensuing symptoms, the prognosis and treatment becomes more accurate and beneficial. Only too often we see a diagnosis made of "Low Back Strain," with prognosis of recovery by baking treatment in one or two weeks, but the patient drifting along into months or years of disability. Doctor Gocher's tables and classifications should, if followed, prevent such mistakes. His last two tables, I feel, are especially important, as they lead to the conclusion that, in 54 per cent of industrial cases, complications develop and have to be treated.

Finally, I note with interest that in no place is the term "sacro-iliac slip" used. Instead, attention is called to the relative frequency of lesions of the sacro-iliac ligaments and infrequency of involvement of the joint itself.

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JAMES T. WATKINS,* M. D., (909 Hyde Street, San Francisco).—To the profession at large, and especially to industrial surgeons, the importance of papers like this cannot be overemphasized.

The treatment of the effects of disease and of injuries by physical therapeutics should have as recognized a place in medicine as drug therapy. Until such treatment is systematically taught in the schools, and taught by men whose knowledge is based upon scientific understanding of just what this or that modality will or will not do—the character and amount and duration of its application—our treatment is bound to be empiric and more or less haphazard.

A careful study of Doctor Gocher's paper is well worth while. We may not accept always his nomenclature nor his pathologic groupings, but that is a matter of no great moment.

What he has attempted to point out, with no little success, is the importance of determining early: (1) just what structures are injured; and (2) when that is determined a consistent, reasonable means of successfully treating the condition by physical means. And I would lay particular stress upon the word *early.* If the differential diagnosis is not made until effusions have had time to organize, until through repetition of minor injuries, or through the irritation of recurrent sprains or stretchings, the condition has become chronic: that is, until actual pathologic changes had occurred in this or that tissue, the problem of bringing about a return to normal had been indefinitely protracted, and not infrequently made impossible of solution. Viewing the matter on its sociologic side, the injured has by just so much ceased to be an asset to society and the aggregate untold millions of dollars are made an added impost upon industry.

Therefore, I repeat, the subject is one of first importance.

* Dr. James T. Watkins died on February 18, 1934.

ANORECTAL FISTULAE—ADVANCES IN THE TREATMENT*

By M. S. WOOLF, M. D.
San Francisco

DISCUSSION *by William H. Kiger, M. D., Los Angeles; Kirk H. Prindle, M. D., San Mateo; David N. Yaker, M. D., Los Angeles.*

THE following remarks concern the origin and management of anorectal fistulae of pyogenic origin, and the steps necessary to preserve the function of the anal sphincter.

Apart from a few blood-borne infections which are deposited near the rectum, the cause of fistula is due to damage to the terminal inch and a half of the intestinal canal, usually brought about by the evacuation of hard constipated feces or to a foreign body tearing down in this locality certain structures such as anal valves, crypts, polyps and external hemorrhoids, and usually accompanied by a resisting sphincter. These structures are in or bound the anal canal, but a foreign body or injury may pierce the rectum higher up. There follows a lymphangitis or thrombophlebitis, which takes the course of anatomical drainage. Then occurs an accumulation of infective material deep to the point of injury; that is, an abscess is formed. Such an abscess cannot drain of itself owing often to the minuteness of the orifice, which becomes edematous and swollen, to posture and to the movements of the sphincters; or if it does drain, it does so intermittently and incompletely.

E. W. Miles, in his discussion of fistulae, says (*Proceedings Royal Society,* September, 1932) an abscess precedes a fistula, and according to the structures in which the abscess has developed, so surgical treatment assumes a definite program.

CLASSIFICATION

Fistulae or abscesses may be grouped, according to Miles (Fig. 1), as follows: (1) subcutaneous; (2) submucous; (3) ischiorectal; (4) subsphincteric; (5) intermuscular; (6) pararectal.

I have purposely omitted mention of two forms of abscess which are usually described in this connection, namely, the pelvic and pelvirectal. The pelvic abscess, although it ruptures rarely into the rectum, heals on drainage being completed. The appendiceal abscess may evacuate itself by this route. The pelvirectal abscess is below the peritoneum but above the levator, and is formed from infection of adjacent structures, such as the prostate, broad ligaments, and usually drain of their own accord in the perineum, vagina or in the buttocks quite wide of the anal orifice. Such abscesses, if surgically opened, will always drain, of course, at the point of incision. Very rarely, indeed, do pelvirectal abscesses drain into the rectum (Miles says that they never do), and then usually between the sphincters. If such be the case

* From the department of surgery, University of California Hospital.

* Read before the General Surgery Section of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.